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ABSTRACT

Six dimensions are proposed for the analysis of educational innovation to forward development activities in developing nations. These dimensions were constructed by members of UNESCO regional cooperative networks throughout the world. Preconditions for specifying criteria were an analysis of the complex relationship between education and overall development, an understanding that educational innovations must depend on the socio-cultural and economic objectives of each nation, and an understanding of the relativity of the term "innovation." The first three dimensions relate to the type of development strategy to which a nation has given preference, characteristics of the innovation strategy and propagation of innovations, and how innovation fits into development. The next three dimensions concern the sectorial nature of educational innovation, how innovation fits into the educational system, and the relationship between long-term and short-term objectives. To determine whether these criteria have been considered, analysts should note the effects of innovation outside the educational system, determine whether it is accepted by those for whom it is intended, investigate institutional links between education and planning, and determine the extent to which educators are trained with regard to development problems. (KC)

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and Techniques of Education

EDUCATIONAL INNOVATION FOR DEVELOPMENT

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TABLE OF CONTENTS

	page
I. INTRODUCTION	1
II. PURPOSE OF THE STUDY	6
III. DIMENSIONS TO BE ADOPTED FOR THE CRITICAL ANALYSIS OF EDUCATIONAL INNOVATION FOR DEVELOPMENT	12
Dimension 1 : Identification of development strategies	14
Dimension 2 : The generalisation of an innovation	17
Dimension 3 : Fitting into the development process	20
Dimension 4 : Sectorial innovations and integrated innovations	22
Dimension 5 : Dualist or unified approach	24
Dimension 6 : Participation and connection between short term and long term objectives	28
NOTE : Innovation and Reform	31
BIBLIOGRAPHY	33

INTRODUCTION

1. This study is the revised version of a working document submitted to the participants in a consultation on regional and sub-regional networks of educational innovation for development, held in Paris in September 1980. It invited them to examine, in the light of their own experience of these networks, the meaning of the concept of educational innovation for development and any lessons to be drawn from it which would improve the organization and activities of these networks. These types of partners involved at different levels in the implementation of regional and sub-regional programmes were concerned :

1) "animators" and those responsible for institutions and national groups forming the basis of the networks ;

2) the co-ordinators of regional or sub-regional networks of educational innovation for development, such as APEID, NEIDA, EIPDAS, CODIESEE, CARNEID, RED ;

3) those responsible in international organisations supporting these networks.

Reflection on the concept of educational innovation for development made it possible to improve existing awareness of these programmes. This study, in fact, proposed guidelines which should permit more systematic description of educational innovations and show how data can be collected so that the pertinence of their relationship to development can be considered. The analysis started during this consultation will be further continued by the various constitutive bodies of these networks, national development groups and regional consultation meetings. Their findings will be examined at a seminar for the representatives of networks, which will take place early in 1982.

2. In order to pinpoint more accurately the concept of educational innovation for development, we shall use for this study an approach derived from systems analysis (the systems approach), so as to integrate the contributions of development economists and sociologists with those of educators.

3. The paper prepared by Unesco for the second session of the Preparatory Committee for the New International Development Strategy, "Endogenous Development, Culture and Society" (1), analyses the relation between education and development in previous decades in these terms :

"Along with the conception equating development with economic growth which prevailed in the 1960's, there was a selective and partial notion of the role played by education in development in which priority was given to types and levels of education that were likely to have the most signifiant short-term impact on economic growth"

The text of the International Strategy for the Second Development Decade added to this trend the allowance for "two major objectives relating to a considerable extent to social considerations of human rights. These were the achievement of universal primary education and the reduction of illiteracy (objectives whose achievement could, moreover, only increase the population's awareness and its capacity to contribute to economic progress)" (2).

In the Unesco Medium-Term Plan, 1977-1982 (3), development is presented as "a global notion, considered in a multidimensional context" and is defined as "a process which necessarily involves a diversity of paths and goals, adjusted to the different sets of values peculiar to each society".

4. This deeper concept of development ought to have led to a fresh definition of the relations between education and development, and even of the missions of education. The promotion of a co-operative programme of educational innovation for development was an initial attempt in this new direction. But even a superficial analysis of the documents relating to educational innovation for development revealed the difficulty of theoretical considerations about the relation between education and development. On the basis of the history of industrialized countries,

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(1) Endogenous Development, Culture and Society, Unesco, 1979, BEP/79. 169, para 33.
(2) Idem ibidem, para 34.
(3) Unesco Medium-Term Plan, 1977-1982, Doc. 19C/4 Approved, para 71.

a causal relationship was postulated between the extension of schooling and economic growth. This postulate is reflected in the very many educational measures designed to alleviate the shortcomings in the educational system which have revealed themselves under socio-economic pressures. In the network programmes, we find numerous activities aimed at partial change in the educational system. In some cases, this takes the form of introducing subjects with a practical slant into school curricula ; in other cases, the quest for a greater degree of socio-economic and cultural efficiency ; in yet others, the development of educational activities to solve practical problems of rural and urban communities. All this seems to point to the conviction that there is a direct relation between education and development, a relation that has not been investigated in depth. We should examine the contrasting expectations placed in the educational system which seem to predominate in industrialized countries and developing countries respectively. In industrialized countries, the public, generally speaking, expects the educational system to adapt itself to an economic and social development which has already occurred, and moreover education is constantly under fire for being behind the times or not matching the demands of scientific, technical and economic progress. Thus innovations are often expressed in terms of "modernization" (1).

In developing countries, on the other hand, the educational system is expected to create the conditions for development. In the light of the supposed causal relation between the growth of education and economic and social development, many authorities conclude that "what is good for education is good for development".

5. This attitude entails several consequences :

- The absence of an explicit development target in the definition of the objectives set by educators (2) ;

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(1) Another idea is also emerging in industrialized countries : education should promote and trigger innovation in spearhead sectors (tele-automation, data-processing, biology, new forms of energy), and not merely adapt itself to these sectors. It may moreover be considered that if education really wants to play a part in the redeployment of the forces of production, it would be a major factor in the strategy of industrialized countries in maintaining their lead.

(2) It may be noted that most training programmes for educational personnel do not include an introduction to development problems.

- The conviction that development can be advanced by educational measures, and on a sector by sector basis ;

- The acceptance that development is placed apart from education which is shown in the co-existence of two sets of values : education defined mainly in terms of individual self-fulfillment and development defined mainly in collective terms.

6. In order to establish the specifity of the concept of educational innovation for development, we must take account of a conceptual and strategic evolution. The conceptual evolution lies in the abandonment of the identification of development with growth (1) and of the dualistic conception of growth (the transfer of science, technology and culture from developed to developing countries), and the adoption of a more global and endogenous conception of development (2).

The concept of educational innovation has evolved, too. In the context of the economic origin of the concept of innovation (3) educational innovation equated educational change with a combinative process modifying the organization of the component parts without changing the objectives, leading to a new or more efficient level of knowledge or know-how, to the introduction of a new method, to the setting up of a new organization, to the extension of educational opportunities, or to the deployment of new resources (non-professional teachers, audio-visual aids, data-processing etc.). In all cases, the idea was either to expand the distribution of the "educational product" or to improve the conditions of its production (stepping up pedagogic effectiveness).

There is now general agreement that educational innovation is characterized by the direction taken by change and is purpose-oriented. It is therefore essential to decide whether an innovation is aimed at creating better conditions for the reproduction of élites, transforming social relationships, or promoting development. The term "educational

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(1) One sign of this identification may be seen in the systematic use of economic indicators such as the GNP as yardsticks of development.
(2) Thus, development may be understook to include not only economic growth, but also a trend in the direction of a more egalitarian society, the attainment of cultural identity and ways and means of participating in decision-making.
(3) Cf. J. Schumpeter : Théorie de l'Evolution Economique, Paris, 1935.

innovation for development" thus clearly sets development as the objective of efforts made to bring about changes in education, thereby creating a distinction between such innovation and all other innovations, notably those aiming only at providing more education.

7. On the strategic level, the gradual trend towards a "New International Economic Order" has entailed two major modifications in traditional procedures.

The first is the promotion of lateral relationships between countries which are undergoing the same development processes are are located in the same region (1), technical cooperation among developing countries.

The second is the development of concepts such as the transfer of technology and the transfer of knowledge (2) which have gone beyond the concepts of education and the dissemination of knowledge and have brought up a number of major questions in connection with the elucidation of the relationships between education and development :

- The question of the direction of the transfer, which may be vertical (from the more developed country to the less developed country) or horizontal ;

- The nature of the knowledge transferred, and in particular the possibility of transfer, the production capacity of knowledge itself ;

- The risks involved in the transfer of knowledge, and in particular the danger of the disintegration of national cultures (3).

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(1) Regional and sub-regional networks for educational innovation for development come within this strategy.

(2) Cf. Unesco SS/78/CONF.623 : Meeting of Experts to examine the first results of research carried out on the conditions pertaining to the transfer of knowledge, Venice, 26-30 June 1978. Cf. also the proceedings of the UNCTAD Conference in Vienna, 20-31 August 1979, on Science and Technology in the service of development.

(3) Michel Gutelman : Plan élaboré de propositions de recherche sur les conditions de transfert des connaissances au niveau international. SS/78/CONF.632/6.

II

PURPOSE OF THE STUDY

8. These few preliminary remarks do not claim to su up recent discussions on ideas concerning educational innovation for development, nor to say anything fresh on the subject ; they merely set the appropriate context in which to make an in-depth examination of the strategy of establishing regional and sub-regional networks "with a view to promoting the application and generalisation of educational innovations for development, making it possible to associate national educational institutions at sub-regional or regional level" (1). These regional co-operative programmes have, in fact, been developed in order that Member States of Unesco may share their experiences in the field of educational innovation for development with other countries, and that they may, conversely, benefit from experience gained elsewhere (2).

9. The originality of these co-operative networks for educational innovation for development lies mainly in the manner in which they operate. Through consultative meetings, the networks themselves define their own programmes in priority sectors, and their own operational methods, conforming to the joint needs and interests of the countries participating.

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(1) 20 C/5, para 1327.

(2) Following the recommendations of the Third Conference of Ministers of Education and Ministers responsible for economic planning in Asia (Singapore, 1971), the first co-operative programme was set up in Asia in 1973 to explore new forms of regional co-operation. After the launching in 1975 of this Asian programme of educational innovation for development (APEID), Unesco was requested by the Conference of African Ministers of Education held in Lagos (Nigeria) in 1976 to establish, with the co-operation of UNDP, a similar network in Africa (Co-operative network for educational innovation for development in Africa - NEIDA). This became operational in 1978. In its turn, the Regional Conference of Ministers of Education and Ministers responsible for economic planning in the Arab States, held in Abu-Dhabi (United Arab Emirates) in 1977, requested Unesco to set up an educational innovation programme for development in the Arab states (EIPDAS), which began operating in 1978. A sub-regional co-operative programme involving six South-East European Member States (Bulgaria, Greece, Hungary, Roumania, Turkey and Yougoslavia) has been operational since 1977. Unesco has also set up, in conjunction with UNDP, a sub-regional network for Central America and Panama (RED) which has been running since 1975. A sub-regional Caribbean network (CARNEID), grouping Member States in the Caribbean, is at present in the preparatory stage.

They also evaluate their activities themselves. In this respect, they testify to the success of the policy of decentralisation promoted by Unesco. One of the factors in the success of these programmes has indeed been the awareness of this responsibility at the regional level and the demand for a greater degree of autonomy within the sometimes rigid framework of the Secretariat. The question remains as to the extent to which these programmes meet the objective originally assigned to them : to support and promote educational innovation for development.

The specificity of the concept of educational innovation for development on which the creation of the networks was based has not, up to now, been established. What distinguishes these innovations from the general run of innovations occurring in the field of education ?

When all is said and done, does not any educational innovation serve the cause of development ?

Insofar as the inefficiency of an education system is what perhaps essentially prevents it from being of service to development, should not any innovation in structures, content and methods, which could increase the efficiency of the education system, be considered as an "innovation for development" ?

Establishing precise criteria for this specific kind of innovation is today a central problem for the future of these networks so that their local activities will not overlap with or duplicate the general activities of Unesco, in particular those of the Regional Offices. The specific characteristics of educational innovation for development should be apparent both in the choice of the activities of the different networks and in the choice of the criteria adopted to evaluate them.

10. This is why this study attempts to identify with sufficient accuracy a number of dimensions which have to be borne in mind so that, in turn, the activities whose ultimate aim is, indeed, development can be identified. In accordance with already established procedures, the ideas triggered in the course of this seminar should be followed up within each network by the national institutions and by consultative meetings, so that the strategies of support for educational innovation may be specified.

A specification of this kind assumes that three preliminaries have been carried out.

The first is an analysis of the complex relationship between education and overall development. The education system is a social sub-system and is determined by the characteristics of the overall system, from the point of view both of its scope and of its content and aims. It is also a sub-system by the transformation of which it is hoped to bring about modifications in the whole. How far is this possible ? How is it possible to arrive at a balance between the inevitable function of social reproduction and the aims of transformation ? How best to avoid creating, even through innovation, an increasingly greater distance between the educational sub-system and the social system ?

The second preliminary is that educational innovations for development must depend on the socio-cultural and economic objectives and conditions, not only of each region but of each nation. In other words, it appears that educational innovation for development is only conceivable in the context of a national development policy.

The third preliminary bears on the very relativity of the concept of innovation. By definition, an innovation is a transformation of an existing system and therefore has a critical function with regard to it. Whether it is introduced generally or simply becomes permanent, an innovation ceases to be an innovation and becomes a part of the system which is then subject to further transformation.

Consequently, the very concept of innovative institutions introduces an element of ambiguity, since it cannot reconcile the inherent precariousness of an innovation with the importance of its temporal dimension.

11. This study proposes neither development indicators nor indicators and methods for the evaluation of educational innovations ; it proposes instruments by which the pertinence of educational innovations as they relate to development problems may be pinpointed and examined, in the context explained above.

Consequently, we shall be concerned much more with the effects of innovation than with the innovation process in itself and its operational objectives.

The indicators proposed are not criteria of evaluation but instruments of analysis making it possible to pinpoint the orientation of an innovation and its end point.

A clear distinction must be made between three categories of problems :

- the evaluation of educational innovations, be they at the grass roots level (on the scale of one or several institutions) or on the national scale. This evaluation is necessarily made in the light of specific objectives and is the task of the institutions themselves or of other bodies appointed for the purpose.

- the evaluation of the functioning of networks for educational innovation for development. This problem is the concern of the networks themselves. The only role that Unesco can play in this respect is to keep an eye on the homogeneity, or rather the compatibility of evaluation procedures and instruments in order to facilitate direct exchanges between the networks themselves.

- the control of the pertinence of networking as a strategy to promote educational innovation for development. This problem relates to the theoretical and practical validity of new concepts of development, the aim being to verify to what extent educational innovations really do have development (in its accepted wider sense) as their end point, and to what extent they achieve it.

Paradoxically, this angle ties in with that of the constituent basic institutions of the networks, which are not specifically interested in either the generalisation of innovations, or even their communicability, but in the lines along which such innovations are directed and their real consequences.

The other aspect of the pertinence of this network strategy is the effective aid which the networks provide, on the national level, to educational innovations for development ; the extent to which it is in the interests of institutions introducing innovations to keep in touch with other innovations and with the results of such exchanges. This is a matter which is relatively independant of the satisfactory functioning of the networks, but it corresponds to the quest for a closer relationship between educational innovation and development. In other words,

transfers of experience from one innovation to another need to be controlled. Do those responsible for educational innovations at the national level whether or not supported by UNDP want to learn something from other innovations in their region ? What do they really learn from them ? Does this help to slant things more strongly on development problems ?

12. These few questions enable a start to be made towards defining a number of characteristics and functions of the networks.

These functions are basically of three types :

The exchange of standardization of information and experience, taking due account of national development policies.

A sort of mutual support in carrying out the critical and polemical function of innovation and keeping it geared to development.

Finally, the function of providing reciprocal knowledge in the application and management of innovations for development.

These three functions, which are by no means the only activities of these networks, themselves depend on two characteristics which have already been mentioned :

- The networks' independence in determining the paths they follow and their modus operandi.

- Their relative precariousness within the very context of an operational and objective definition of innovation.

13. Consequently, we do not propose here instruments for the evaluation of the process and the results ; this is a matter which is the concern of the networks themselves. The point is to arrive at a validation of the objectives themselves, their cohesion, and their adequation to the development process.

Precisely because of this, the present study does not lie in the context of either a formative evaluation (regulation) or a summative evaluation. What we are concerned with is the analysis of the significance of innovatory measures, that is to say the reality of the changes brought about and the nature of these changes as vectors of development in the "environment" of educational innovation.

14. The definition of a supporting strategy for these innovations, notably through bringing innovatory institutions into a network, depends on a clear identification of the preceding questions. So it is not until these problems have been clarified within the institutions and networks and between the networks that the present strategy of promoting educational innovation for development by setting up co-operative networks at regional and sub-regional levels can be validated.

This validation requires, moreover, a better knowledge of the mechanisms by which these innovations are disseminated ; the advantages and limitations inherent to an activity taken at the regional or sub-regional level when the countries concerned differ in respect of their type of society, structures and development objectives ; and the relationship at the national level between innovations at the grassroot level and the determination of educational policies. All these questions figure in the Unesco programme for the period 1981-1983.

III

DIMENSIONS TO BE ADOPTED FOR THE CRITICAL ANALYSIS OF EDUCATIONAL INNOVATION FOR DEVELOPMENT

15. We propose here a list of dimensions which the analysis should cover. The list is neither exhaustive nor definitive, for the following reasons :

- it has to be established in the light of national and regional situations and national policies ;

- it cannot be established independantly of the nature of the innovations and the specific objectives of the networks.

16. To each dimension there corresponds a series of indicators, which, it will be recalled, are in this case not so much instruments of evaluation as critical reference points. Some networks have already provided, in function of their programmes, a substantial number of reference points of this kind (1). We shall refer also to various instruments proposed by R.G. Havelock and A.M. Huberman (2) and to the pattern of analysis of innovations proposed by M. Debeauvais (3).

The first three dimensions which we shall note are of a strategic nature. They relate to :

1) the type of development strategy to which preference seems to have been given ;

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(1) Fourth Consultation Meeting on the Asian Programme of Educational Innovation for Development : Evaluative Review and Recommendations for the Second Programming Cycle. Final Report, Bangkok, Unesco, 1977.

(2) Havelock and Huberman : Solving Educational Problems : the theory and reality of innovation in developing countries. Unesco, 1977, 309 pp.

(3) M. Debeauvais and the Educational policies research team of the University of Paris VIII, Vincennes : La Communication et les innovations éducatives. ED/78/WSW/118. Doc. BIE, 1978. 59 pp.

2) the characteristics of the innovation strategy and of the propagation of innovations ;

3) how innovation fits into development.

The following three are tied in more closely with the actual object of educational innovation ; they concern :

4) the more or less sectorial nature of educational innovation ;

5) how innovation fits into the educational system (dual or unified strategies) ;

6) the participation of the different agents and the relationship between short term and long term objectives.

The criteria proposed hereunder do not constitute a homogeneous whole ; there can be no question of cumulating them with the idea of measuring in any way the relationship between educational projects and development.

Dimension 1 : Identification of development strategies

17. We may distinguish several approaches to development. In the first of them "... the basic principle concerning the application of science and technology to development was that if the vast range of techniques available in the industrialized countries were placed at the disposal of the developing countries, through the mechanism of technological transfer, that would be sufficient to ensure the spread of technological development and to meet those countries' economic and social needs" (1).

The development strategy corresponding to this approach rests on the simultaneous introduction of specialists, technology and equipment from abroad (2).

Educational innovation is then seen as the setting up of the necessary facilities for making use of the techniques thus acquired, and preparing local labour, so as gradually to achieve a purely exogenous development. Functional literacy campaigns tied in with the use of new tools, and the introduction of technical education (or sending technicians abroad so as to speed up their training), corresponded to this model. This strategy was often accompanied by the abandonment of any attempt to improve the empirical tools and methods of the traditional sector, and a refusal to encourage production based on those methods.

18. In its resolution 33/193, the United Nations General Assembly placed development in the perspective of a New International Economic Order. In the introduction to the Medium-Term Plan (1977-1982), the Director-General of Unesco, referring to the problems arising in the modern world, pointed out that they lead up to "a more general, overall subject, that of the development of people and societies. For that is the widest concept of all, taking in the different aspects of world problems -whether quantitative or qualitative, whether they concern the industrialized or the developing countries ; it is a global notion, considered in a multidimensional context, economic as well as social,

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(1) Endogenous Development, Culture and Society. Unesco, BEP/79/169, p. 4, para 14.
(2) Ignacy Sachs : Pour une Economic Politique du Développement. Paris, Flammarion, 1977.

scientific, technological and cultural. In a word, it is a process which necessarily involves a diversity of paths and goals, adjusted to the different sets of values peculiar to each society" (1).

The promotion of educational innovation for development falls within this perspective of endogenous development, which at the national level is reflected in two alternative strategies.

19. The first strategy rests on the introduction of specific innovations with a view to a specific development. Even in the case of the introduction of a more or less wide range of scientific or technical knowledge, it entails the modification of these technologies in order to allow for local conditions concerning raw materials, methods of working, the availability of labour, human skills and abilities, and social, cultural and political patterns (2). It is accompanied by an attempt to seek to promote appropriate and effective technologies, but which make heavy demands on labour. In this case, the objective of educational innovation is to implement a policy of endogenous social and technological development.

20. The other strategy makes endogenous development the objective rather than the condition of development.

It may rest either on recourse to foreign specialists using foreign technologies employing appropriate equipment produced locally, or on the use by local labour of foreign technologies and equipment, or again on the use by local labour of equipment produced locally but depending on foreign patents or know-how (3).

In this second strategy, the specific function of educational innovation is at one and the same time adaptation to local conditions, and the speeding up of the process ; but the educational innovation itself may be "borrowed" from exogenous models.

21. These two strategies are not necessarily contradictory ; they may be considered as two distinct components of a single process. The second may be seen as corresponding to the desire to speed up the development process in order gradually to achieve maximum independence,

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(1) Document 19C/4, Approved, para 71
(2) Bichara Khader : Réflexion sur les transferts des techniques. In : Technologie et Tiers Monde, Université de Louvain la Neuve, Belgium, 1979.
(3) Ignacy Sachs, op. cit.

and hence an increasingly mature degree of social, cultural and economic identity.

The first strategy may correspond to the decision to make this independence and maturity the condition of a development which will be speeded up in a second stage.

Depending on their specific purpose, both these strategies may therefore be seen as complementary. In the scientific and technical fields, it seems neither possible nor desirable to seek a totally endogenous solution. On the other hand, endogeneity may appear to be the predominant factor where social and cultural processes are concerned.

Indicators corresponding to dimension 1 : development strategies

22. In order to analyse educational innovation for development, it is essential -in the light of the existence of pluralist strategies. the alternatives adopted by Member States, and the sectors of activity concerned, to :

(i) identify the kind of strategy in which one is placed and in which phase of its implementation ;

(ii) identify the nature of the innovation, how it operates and to what extent it affects all or part of the population ;

(iii) identify the role of educational innovation in national development policy.

Dimension 2 : the generalisation of an innovation

23. Most theoretical analyses of educational innovation take as a criterion of its positive characteristics the possibility of generalising it to cover the whole of the system, and hence they consider this possible degree of extension as an essential factor. Generalisation is indeed the stumbling block of most innovations. Bringing about a change involves such a human and effective investment that this investment itself often constitutes the main substance of the innovation. Independantly of their content and their relevance to the problems to be solved, there are few innovations which do not give the impression of succeeding when the innovator is the direct protagonist in the implementing of his project. It is when the time comes for extension, that is to say when new protagonists come into the picture, that difficulties arise, and in some cases certain proposals are seen to be inappropriate. In the perspective of development, this problem of generalisation is by definition a major one.

24. Two processes of propagation should be distinguished :

- Horizontal dissemination or extension, which is mainly characterised by a change of scale and is a condition of the stepping up the effects of the innovation ;

- Induction, characterised by the determination of the upstream and downstream effects of the initial innovatory measure, or in other words by the triggering of a sequence of possible innovations which have to be consciously brought about and multiplied so as to reach a critical mass.

These two processes combine in varying degrees where educational innovation for development is concerned. Tremendous human and material resources are required to satisfy people's growing demand for culture and education and to advance towards the multiple objectives of development. In most countries, but especially in developing countries, such a task cannot depend on government resources and measures alone ; local and individual resources and capacities must be mobilized. Consequently many and varied innovatory measures should in all cases precede, accompany and follow up every process that stems from a central and public

sector origin, so as to mobilize a high proportion of the population. No reform can do without innovation.

25. By definition, à reform is part and parcel of the process of dissemination and involves a relatively rigorous mastery and control of the phenomena of induction which may be an obstacle to generalisation. Hence although the transformation of educational innovation into reform is one of the objectives of innovatory institutions, it seems to us important not to confuse the logic of innovation with that of reform (1).

Furthermore, a reform -as compared with an innovation- implies a change in the "level of the system" (2).

An innovation is characterised at the outset by the fact that the structures of decision-making and implementation either overlap or are relatively close. The same person or group proposes the change, implements it, and checks that its objectives are attained -which entails short feedback mechanisms, short reaction times and hence a permanent matching of the innovation with its own effects (3).

When the innovation broadens into a reform (change of scale), the structures of decision-making and implementation become discontinuous (change in the level of the system). There is practically no feedback loop any longer ; evaluation must proceed along specific procedures and be performed by specific bodies. In methodological terms, the evaluation of an innovation that has become a reform calls for instruments quite similar to those of the experimental method ; in other words, it rests on the control of variables and the generalisation of results. The evaluation of an innovation rests on a much more clinical approach, in the nature of "action research".

26. Consideration of educational innovation for development introduces additional specificities in the light of the preceding remarks :

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(1) Cf. apprended note : Innovation and Reform.
(2) The Educator and the Systems Approach, Unesco, 1977. Chaps I and II (new 1980 version in preparation).
(3) In many innovations a sort of permanent innovatory mechanism may be observed which can lead to a profound transformation of the initial objectives, without those concerned being aware of the fact.

When an innovation is transferred from one country to another, and especially from an industrialised country to a developing country, there is a higher risk of dissociation of the two types of propagation (extension and induction) ; that is to say, no related innovations may be triggered, or if they are they may deviate very considerably from the parent one.

But, where development is concerned, it is precisely the process of induction which is generally the more important, the significance of the innovation lying not in the transformation of one element of the system, but in the consequences it entails outside the educational system.

If an educational innovation is to have a "development effect", it must attain a certain degree of propagation within a given period of time. The determination of the threshold beyond which an educational innovation can produce an effect on systems other than the educational system itself is therefore a point of major importance.

Indicators corresponding to dimension 2 : the generalisation of an innovation

27. Among the indicators of the possibility of generalising an innovation, we may note :

(i) its origin : endogenous or exogenous ;

(ii) its source : central or local ;

(iii) the process of propagation : extension, or the induction of fresh innovations ;

(iv) the nature of its effects outside the educational system ;

(v) the extent to which it is accepted by those for whom it is intended : understanding of its significance, integration into the socio-cultural environment, integration into the institutional framework ;

(vi) cohesion between the theoretical model, the operational objectives and the conditions of implementation ;

(vii) the nature of the feedback mechanisms ;

(viii) the procedures adopted for evaluation.

Dimension 3 : Fitting into the development process

28. Whether an educational innovation effectively forms part of the national development process depends on the degree of autonomy of the education system, that is to say, on whether the objectives are specific to the education system or whether they are subordinated to local or national planning objectives.

Educational innovation for development may take the form either of a redirection of the objectives specific to the education system, so as to link them with overall development objectives, or of the introduction of specific development objectives into purely educational objectives, or of improvements in the efficiency of the education system if its is felt that this system makes a real contribution to the overall objectives of development. The general links existing between an education system and the national development objectives must therefore be examined in order to determine the form and characteristics of an innovation. This dimension can thus be examined not in terms of the operation of the networks, but only in the national context. Other factors which come into play are the type of protagonists participating in the educational innovation, whether they belong exclusively to educational circles or not, their specific interests, and their degree of awareness of the practical problems of development.

This dimension can be assessed on the basis of criteria and indicators adopted at the national level to evaluate the educational innovation, or more simply in the light of the personality and application of those responsible for this evaluation and the decisions resulting from it.

Lastly, at the national level in particular, the ways in which the educational innovation fits into the development process may be assessed in the light of the tie-in, within the educational innovation itself, of the objectives of positive change (progress) and the generalisation of this change (its extension). These two objectives bring us back to dimension 2.

Indicators corresponding to dimension 3 : fitting into the development process

29. (i) institutional links between education and planning ;

(ii) the composition of the "national groups" (in the framework of the networks) ;

(iii) the protagonists participating in the educational innovation ;

(iv) the extent to which educators are informed and trained regarding development problems ;

(v) who evaluates the educational innovation ?

(vi) the tie-in between the objectives of progress and extension (generalisation).

Dimension 4 : Sectorial innovations and integrated innovations

30. The significance of an innovation insofar as it is related to development involves the actual purpose of the innovation.

A more precise definition of the objectives, a better organisation of the learning process in the light of the objectives, the use of adequate methods, their adaptation to the psychological, cultural and other characteristics of pupils, help to make the learning process more effective, but do not necessarily mean that it is development-oriented.

Any sectorial innovation, relating for example to the modification of curricula, the transformation of teaching methods, the management of a school, or even the extension of schooling, may be assumed to increase the effectiveness of the educational process and the school system, but remains independant of the development process. Admittedly, any development of the educational system could be considered to contribute to overall development, but the complexity of the mechanisms involved and their interdependence with other factors mean that this contribution is very difficult to control.

31. Educational innovations for development include only those innovations whose object is not merely to improve the effectiveness of the educational process, but to transform that process and its objectives. For example, independantly of any epistomological criterion, we may consider that the introduction of interdisciplinary practices, even though in fact it leads to great difficulties in assessing what is learned, and sometimes to an apparent decline in the learning of individual subject matter, modifies the traditional orientation of the educational system by replacing the acquisition of more and more knowledge by a change in the relationship between the school, day-to-day activities and environment.

Hence, interdisciplinary practices, without being a criterion, are an indicator of a possible reorientation of the educational system in the direction of social rather than strictly pedagogical effectiveness.

Similarly, the participation of environmental factors -parents, local communities, productive structures- in the running of the school can be a de facto obstacle to the efficient management of an establishment, in particular to the speed of decision-making, the immediate and

widespread application of a reform, and so on. In some cases, it can run counter to the process of planning and forecasting. But, in counteracting the autarchy of the educational system, it is an indicator of the possibility of introducing prospects of overall and endogenous development into a system which would otherwise continue to aim at achieving its own self-contained effectiveness.

Indicators corresponding to dimension 4 : sectorial innovation and integrated innovation

32. The capacity of integration of an innovation (integration of one subject with another, of practice with theory, of the school with its environment, of the learning system with the social and cultural system, etc.) can serve as an indicator of whether an innovation is really an educational innovation for development. We may note in particular :

(i) the nature of the effects : structural transformation or otherwise ;

(ii) the scope of the effects : internal or external to the educational system ;

(iii) the diversity of the protagonists : those belonging to one sector only (e.g. education), or to several sectors (education, production, health, culture, etc.) ;

(iv) the involvement of different decision-making bodies (federal, central, local).

Dimension 5 : dualist or unified approach

33. Analysis of the programmes of the various regional and sub-regional networks for educational innovation for development reveals that there are two approaches, whose consequences on the tie-in of education with the development process are very different. The first and the most frequently adopted approach may be called the dualist approach. It takes one of two forms : either the introduction, as a complement to the educational system of a number of educational measures centred directly on problems of economic, social and cultural development ; or the introduction of development-related activities alongside traditional school activities. These development oriented innovations thus consist either of extanding education to specific target population sectors (adults, rural dwellers, women, more or less marginal categories), or of offering educational contents additional to or superposed upon traditional contents ; for example productive work.

34. The multiplication of specific measures designed for rural dwellers risks creating two educational sectors : a community sector, centred on production processes and social activities, whose aim is to effectively help to maintain the rural population in situ and to improve its living conditions ; the other an urban élitist sector based on the individual acquisition of knowledge and diplomas and continuing to obey the rules of cohesion specific to the educational system, taking no account of proposed development strategies.

The introduction of productive activities in a school without modifying the timetable and calendar in the light of the conditions governing production makes these activities purely symbolic, corresponding to an attempt to create positive attitudes towards work in general or a distinct activity sandwiched among other school activities, rather than a re-orientation of the educational process itself.

This is therefore a dualist approach, which assigns a marginal role to the development process and which tends objectively to protect the traditional school system. This segmentation ultimately helps to accentuate some of the characteristics of under-development.

35. The other approach is, on the contrary, a unified one. It consists of introducing the development perspective into the educational system itself, and in so doing drawing into inferences where policies, structures, curricula and methods are concerned. For instance, an innovation of this type relating to the content of general education would consist of defining the curricula in the light of the requirements of economic, social and cultural development, and not in terms of a humanist tradition or on the basis of what is known of the developmental psychology of the child. In practice, this unified approach is much more rare, and numerous obstacles are encountered in itsapplication.

36. One of the clearest signs of the gap separating the educational system from innovations for development is that such innovations did not succeed in modifying the content, style or purpose of examinations. Examinations continue to be one of the essential elements of the dualist structure of educational systems ; they are the means whereby the individual acquisition of a certain degree of knowledge and skill is ratified, this ratification authorizing access to a higher level, that is to say the continuation of the pupil's education. Except in the case of terminal examinations, it is not examination success but examination failure which determines whether the pupil embarks upon productive activities and the social activities corresponding to them ; and this establishes a very dangerous and pradoxical alternative : "do well at school or go out to work".

37. Frequently, again, it is the traditional educational system which serves as the reference for educational activities that are directly development-oriented. An analysis of the criteria employed for the evaluation of literacy programmes shows that these criteria are not determined in the light of social or economic indicators of development, but that they relate to measures borrowed from the school system. In many countries, adult education, the introduction of which is often presented as a development-related measure, seeks at best to differ from school education in respect of pacing of learning and methods of teaching, but not in respect of the content and the objectives of what is taught.

38. Furthermore, especially in countries where the pressure of industrial development is still weak, either because industrial development itself is weak or because the country is mainly a consumer of foreign technologies, the seclusion of higher education means that the whole formal educational system (whose objectives, and the conditions of access to which, give precedence to the preparation for higher education) is biased. If the educational system as a whole does not set development as its objective, the "production of high-level qualifications" will be privileged. This affects and orients upstream levels of education and makes it impossible to go beyond dualism.

39. The ways in which higher education and research are implicated in educational innovation for development are an important factor in the analysis of the effective weight given to development. And, in order to play their role, higher education and research must themselves be wellsprings of innovations (1).

- Pedagogic innovations relating to methods of transmitting knowledge and types of attitudes generated among pupils.

- Technological innovations, through the use of locally produced equipment adapted to local conditions and cultures.

- Structural innovations : decompartmenting of faculties and stepping up of interdisciplinary approaches ("communities have problems, but universities have departments").

- Innovations from the point of view of their function in society.

Higher education is indeed one of the major components of a policy aiming at developing endogenous capacities of production of knowledge and technologies.

40. Educational innovation for development has a two-fold need of a re-oriented higher education. On the one hand, higher education must not conform to a negative model which accentuates the marginal role of

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(1) Cf. in particular Bichara Khader : "Réflexion sur le transfert des techniques" ; and "Les universités arabes : usines de diplômes ou pôles de rayonnement de la culture" (Communication delivered at Sassan ISPROM, November 1979) ; also G. Fourez, "Science et pays en développement", Namur, Faculté des sciences, Nov. 1979.

endogenous development measures ; and on the other hand, educational innovatory activities must be able to benefit from the human and material resources of higher education.

Indicators corresponding to dimension 5 : the dualist approach or the unified approach

41. From the above considerations there emerge four indicators for the analysis of the extent to which educational innovation for development effectively contributes to the re-orienting of the educational set-up.

(i) the distribution of these innovations in the formal and non-formal sectors ;

(ii) the characteristics of the process : the addition of a new activity or a new objective, or the transformation of existing activities and objectives ;

(iii) the nature of the criteria employed for ratifying the acquisition of knowledge and skill (retention or not of traditional criteria of ratification of formal sectors by non-formal sectors).

(iv) the role of higher education and research.

Dimension 6 : Participation and connection between short-term and long-term objectives

42. What characterizes an educational reform, whether it takes the form of a change of curriculum, of organizational framework, or of the availability of education, is that it corresponds to a long-term objective and its effects are often appreciable only at the national level. To take an example, it is certain that the effects of making schooling more widely available or raising the school leaving age cannot be measured in terms of economic, social and cultural development until a long time afterwards, and then only at the national level ; whereas in the very short term and at the local level these changes may be seen as entailing higher costs, speeding up rural exodus and so on. A growth rate which may appear highly significant to the decision-maker and the statistician may be infinitesimal and hence imperceptible -if not negative- for those who undergo such growth and will not be seen as a motive force of development.

The need to tie in the long term view with the short term view is a problem specific to innovation for development. Educational innovation in the general sense need not be felt as immediately beneficial by its instigators or by those whom it immediately affects. A pupil is unlikely to appreciate directly the effects of a change in curriculum falling into the general context of a modernisation of educational content ; nor are parents likely to regard a change in the teacher-pupil relationship other than as an implied criticism of their own relationship with their children.

However, if the persons involved in overall development do not all participate in the educational innovation at the outset, it is unlikely that it can play a meaningful part in development.

Development as a social phenomenon is experienced mainly as a qualitative change, and most people see only its immediate effects. An educational innovation for development must therefore be immediately comprehensible by those who experience it, otherwise they will not go along with it.

This appears to be the prime condition for real participation by the different protagonists, including the pupils themselves, in the initiation, management and evaluation of the innovation when it is being made in the context of school. This is the only difference between participation and the traditional forms of democracy by delegation, which appear to be quite inadequate as a basis for any development process (1).

43. In other words, the possibility of the protagonists immediately grasping its implications and effects seems to be an important characteristic of an innovation for development. This also explains why educational innovation for development has multiplied mainly in sectors in which the rigidity of the system has not been an obstacle to the introduction of related changes, and in which practical relationships with the productive sector and with the social and cultural system have been able to trigger immediately perceptible effects such as a rise in production, a modification of social relationships, and the like.

44. All these remarks do not mean that the long term view should be subordinated to the short term view ; that would run counter to the solution of both educational and development problems. What is meant is simply that in order that an educational innovation may be tied in with a development process that can be experienced at one and the same time as endogenous and all-embracing, its short term effects, perceptible to all those involved, should act as the motive force of the innovation, the long term being considered mainly as a period of regulation and correction.

We should beware of an educational innovation for development running counter to long term objectives. If it is to form part of an overall picture, it will not be enough for an educational innovation for development to have short term effects.

Indicators corresponding to dimension 6 : participation and connection between short term and long term objectives

45. In analysing an educational innovation for development, the

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(1) Cf. Is it possible -and if so, by what methods and means- to institutionalize the participation of people in development, taking into account different socio-economic, political and cultural situations ? R. Colin, Unesco, PAR 12 SS-80/WS/25.

following points should be clearly specified :

(i) the role of certain short term objectives in triggering the process of endogenous development ;

(ii) the existence of explicit aspirations or expectations as to the purpose of the educational innovation ;

(iii) the importance of the objectives for the different social protagonists, and the benefits they can derive from them ;

(iv) the contribution made by innovation to developing the capacity for critical analysis and self-organization in the different protagonists ;

(v) consistency with long-term development objectives.

NOTE

INNOVATION AND REFORM

Proposing as the objective of an educational innovation its transformation into a reform should not lead to the confusion of two distinct logics. In the analysis of dimensions, stress was laid on the most marked differences concerning the processes of dissemination (reform is disseminated mainly horizontally, and "controls" the process of induction) and on the difference of structure in terms of the systems approach. We consider it important to note also the following characteristics :

(i) in assessing the real consequences of an attempt to transform a situation or a system, it is possible to make a distinction between :

- the results, that is to say the extent to which the objectives aimed at have been effectively attained ;

- the effects : that is to say the extent to which the objectives having been attained, the transformation expected from the attainment of these objectives really occurs (e.g. if the objective of an increase in the school attendance rate has been attained, has there really been a speed-up or a qualitative transformation of development ?) ;

- the impact : that is to say, the effective outcome of the measure, independantly of the objectives aimed at, and outside the sectors in which it was intended to produce an immediate effect ;

What seems to characterize a reform, is that its effects and impact are presumed to depend closely on its results, and that too great a gap between these three outputs may be considered as a discord or a failure. The innovatory process, on the other hand, is much more flexible. An educational innovation can fail to attain the objectives aimed at, yet can have a strong impact as a result of the enthusiasm which it arouses or the break with established habits and structures which it causes.

(ii) The different between an innovation and a reform lies in the center-periphery dynamic. The propagation of a change from the centre to the periphery or vice-versa cannot be analysed in symetrical

terms. Neither the traditional mechanisms of resistance, nor the leakages and distorsions, nor the problems of adaptability, are of the same order. At the local level, the application of participation procedures to the implementing of a reform (1) does not compensate for non-participation in the innovation.

(iii) The development process, like the innovation process, is by definition temporal : it occurs within a given duration of time. Consequently, the rate of propagation of an innovation is one of its essential characteristics, and depends on the number of protagonists and on the induced effects.

The process of reform lies in quite a different temporal context : that of administrative decision-making, which ideally tends to boil down to the time required for the information to spread and for the intermediate operations to be performed.

(iv) The problem of the dissemination of a reform is therefore that of reducing distortions and snarl-ups to a minimum. A reform is aimed at setting up a homogeneous and balanced system. An innovation, on the other hand, even if it takes the form of a process of problem-solving (and hence of establishing an equilibrium), is more of a dynamic process, inducing a sequence of changes.

(v) In a certain sense we may compare the relation between reform and innovation with that between codified law and case law. In the French judicial system, some elements of jurisprudence gradually become part of the code of law, but the process of the permanent establishment of case precedents is not the same thing as codification, though it may serve as a source of codification.

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(1) Cf. IIEP seminar, November 1979, on the implementing of educational reforms at the local level.

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